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# Glyco-Forum section

## Announcement

### Siglecs: a family of sialic-acid binding lectins

It used to be thought that immunoglobulin superfamily members (other than antibodies) are primarily involved in protein : protein interactions, and do not recognize carbohydrates. In recent years, several immunoglobulin-like proteins have been described that can recognize biologically relevant glycans. These have now been given the generic name of "I-type lectins" (Powell and Varki, 1995, *J. Biol. Chem.*, 270, 1423–1426). Amongst the I-type lectins, there is a very distinctive subfamily of sialic-acid binding cell surface receptors, that share clear-cut structural and functional similarities. This group of molecules currently comprises sialoadhesin, CD22, CD33, myelin associated glycoprotein (MAG) and Schwann cell myelin protein (SMP) (Crocker *et al.*, 1996, *Biochem. Soc. Trans.* 24, 150–156). They are all integral membrane proteins with extracellular domains consisting of unusual N-terminal V-set Ig domains, followed by variable numbers of C2-set Ig domains ranging from 16 in sialoadhesin to 1 in CD33. Where known, the gene structures are similar and the genes are likely to have arisen by gene duplication. Each protein is expressed in a highly restricted fashion and is therefore likely to be involved in discrete functions. Thus, sialoadhesin is restricted to macrophages, CD22 to B cells, MAG and SMP to glial cells, and CD33 to myelomonocytic cells.

As with many such newly evolving fields, there is currently no generally accepted nomenclature to classify these molecules as a group. After consultation among researchers working on these proteins, we feel that an appropriate family nomenclature should contain elements of all of the three following items:"sialic acid"/"immunoglobulin"/"lectin". On this basis we propose the term "siglecs." Note that "siglecs" would be a subset of I-type lectins, just as "selectins" are a subset of C-type lectins. Although we see no reason why the current members of this family should have their individual names changed, we feel it would be useful to categorize them within the siglec nomenclature. This would also provide a framework for naming new members of the family that arise from the genome project or elsewhere. Criteria for inclusion of other immunoglobulin-related proteins in the siglec family would be (i) the ability to bind sialylated glycans and (ii) significant sequence similarity within the N-terminal V-set and adjoining C2-set domains. We suggest that individual members of the family be designated with a numerical suffix, as follows:

Sialoadhesin (Sn): Siglec-1
GenBank accession number is Z36293 (mouse).

CD22: Siglec-2
GenBank accession numbers are X52785, U62631 (human); L16928 (mouse).

CD33: Siglec-3
GenBank accession numbers are M23197 (human); S71403, S71345 (mouse).

Myelin associated glycoprotein (MAG): Siglec-4a
GenBank accession numbers are M29273 (human); M14871 (rat); M31811 (mouse).

Schwann cell myelin protein (SMP): Siglec-4b
GenBank accession number is S83711 (quail).

This designation is based on the following considerations: (i) sialoadhesin was the first member of this family to be characterized as a sialic-acid binding lectin, (ii) categorizing CD22 as siglec-2 and CD33 as siglec-3 respectively is useful as an "aide-memoire" and (iii) MAG and SMP should be grouped together because they are highly related structurally and functionally. In addition, SMP has so far only been detected in avian species and a mammalian homologue may not exist.

We propose that all future publications concerning these proteins should use the siglec nomenclature when describing the proteins collectively and that new members of the family should be named siglec-5 etc, following consultation with other scientists in the field.

Paul R. Crocker, Dundee University, Dundee, UK
Edward A. Clark, University of Washington, Seattle, WA, USA
Marie Filbin, Hunter College, New York, USA
Siamon Gordon, Oxford University, UK
Yvonne Jones, Oxford University, UK
John H. Kehrl, National Institutes of Health, Bethesda, MD, USA
Soerge Kelm, University of Kiel, Germany
Nicole Le Douarin, CNRS, Nogent-sur-Marne, France
Leland Powell, University of California, San Diego, La Jolla, CA, USA
John Roder, Mount Sinai Hospital, Toronto, Canada
Ronald L. Schnaar, Johns Hopkins School of Medicine, Baltimore, MD, USA
Dennis C. Sgroi, Massachusetts General Hospital, Boston, MA, USA
Ivan Stamenkovic, Massachusetts General Hospital, Boston, MA, USA
Roland Schauer, University of Kiel, Germany
Melitta Schachner, Universitatsklinik Hamburg, Germany
Timo K. van den Berg, Vrije University, Amsterdam, Netherlands
P. Anton van der Merwe, Oxford University, UK
Suzanne M. Watt, Oxford University, UK
Ajit Varki, University of California, San Diego, CA, USA

# Meeting Announcements

## Royal Society of Chemistry Carbohydrate Group Spring Meeting

University of Birmingham, UK
March 29–April 1, 1998

Saccharides: Structure, Function and Synthesis

The scientific program will cover synthetic, structural and biological aspects of saccharides and glycoconjugates and the primary aim is to bring together chemists and biochemists to discuss common research interests. The meeting will comprise invited lectures, posters and a session for postgraduate presentations.

The following scientists have agreed to attend:
M Bols (Aarhus University), V Crescenzi (University La Sapienza), A Dell (Imperial College), D H van den Eijnden (Vrije University of Amsterdam), W-D Fessner (RWTH Aachen), R A Field (University of St Andrews), S Fry (University of Edinburgh), P-E Jansson (Karolinska Institute), G A Jeffrey (University of Pittsburgh), J J Krepinsky (University of Toronto), S V Ley (University of Cambridge), M Martin-Lomas (Csic Inst Quim Organ.), M Meldal (Carlsberg Laboratory), R Miethchen (University of Rostock), T Peters (Medical University of Lübeck), J H Naismith (University of St Andrews), J Thiem (University of Hamburg), E Toone (Duke University), T W Rademacher (University College London), R Roy (University of Ottawa), C Unverzagt (Technical University München).

For further information, please contact:
Dr G J Boons
School of Chemistry
University of Birmingham
Edgbaston, Birmingham B15 2TT, UK
Fax: 0121-414 4403
E-mail: gjboons@chemistry.bham.ac.uk)
Web: http://chemistry.rsc.org/rsc/perkdiv.htm#2

## XIX International Carbohydrate Symposium

San Diego, California, USA
August 9–14, 1998

For further information, please contact:
ICS 98 Symposium Secretariat
Department of Chemistry
516 Physical Sciences I
University of California
Irvine, CA 92697–2025, USA
Tel: 714-824-8976
Fax: 714-824-1372
E-mail: ics98@uci.edu
Web: http://www.ics98.uci.edu

## Eurocarb X, the 10th Eurocarb Carbohydrate Symposium

University College, Galway, Ireland
July 11–16, 1999

The main topics of the symposium are as follows:
1. Synthetic aspects of carbohydrates and carbohydrate-containing compounds
2. Structural analysis of (poly)saccharides and glycoconjugates, including spectrochemical methods
3. Conformational analysis/molecular modeling of (poly)saccharides and glycoconjugates
4. Biochemical, biological and medical aspects of (poly)saccharides and glycoconjugates.

There will also be a series of special sessions, including a session on structural aspects of polysaccharides in memory of Guy Dutton.

For further information, please contact:
Eurocarb X Secretariat
University College Galway
Galway, Ireland
Fax: 353 91 525 700
E-mail: eurocarb@ucg.ie
Web: http://www.ucg.ie/eurocarb